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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,677	01/04/2002	Stephen Brian Falder	16644/09003CIP	9699

27530 7590 04/20/2007  
NELSON MULLINS RILEY & SCARBOROUGH, LLP  
1320 MAIN STREET, 17TH FLOOR  
COLUMBIA, SC 29201

EXAMINER
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PRYOR, ALTON NATHANIEL

ART UNIT	PAPER NUMBER
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1616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/039,677

Applicant(s)

FALDER ET AL.

Examiner

Alton N. Pryor

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1,46-49,52,53,59,61,62,70,71,78,82-85,88-92,95-100 and 105-134 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1,46-49,52,53,59,61,62,70,71,78,82-85,88-92,95-100,105-134 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1/25/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicant's arguments, see paper, filed 1/16/07, with respect to the rejection(s) of claim(s) 35 under USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of position below.

In light of applicant's response filed 1/16/07, all previous rejections are withdrawn. Applicant provides Annex I and Annex II which therein discloses unexpected results for the invention comprising a dialkyldimethylammonium compound wherein the two non-methyl alkyl groups are selected from alkyl groups comprising 8 to 12 carbon atoms and a benzalkonium halide plus a compound selected from polydimethylsiloxanes and polydimethylhydroxy-siloxanes. Also, in light of applicant's response filed 1/16/07, all claims are considered. However the election requirement made by applicant in paper filed 7/23/03 is maintained. The elected composition comprising benzenemethanaminium-N-dodecyl-N,N-dimethylchloride, polydimethylhydroxysiloxane, 2-phenylphenol and isopropanol is allowable. See results in Annex I and Annex II.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 62,70,71,89,96,99, and 106 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1616

Claims 62,70,71 recite the limitation "the at least one anti-microbial agent is selected from an amphoteric compound, an iodophore, ... and a nitrogen based heterocyclic compound" in lines 2-5. There is insufficient antecedent basis for this limitation in the claim. The claim broadens the scope of the antimicrobial agent in claim 1 which there exist no antecedent basis.

Claims 89,96,125 recite the limitation "the functional compound". There is insufficient antecedent basis for this limitation in the claim.

Claim 99 recites the limitation "adding the at least one compound" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 106 recites the limitation "adding one first anti-microbial agent" in line 4. The claim is confusing since claim 106 does not refer to adding a second or additional antimicrobial agent.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1,46-49,52,53,59,61,62,70,71,78,82-85,88-92,95-100,105-134 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an antimicrobial agent comprising a dialkyldimethylammonium compound wherein the two non-methyl alkyl groups are selected from alkyl groups comprising 8 to 12 carbon atoms and a benzalkonium halide plus a compound selected from polydimethylsiloxanes and polydimethylhydroxysiloxanes, does not reasonably provide enablement for an antimicrobial agent comprising a quaternary ammonium compound having the general formula in which one or two of the R groups alkyl substituted by aryl or interrupted by aryl or heteroatom (oxygen) and

Art Unit: 1616

the other R groups being C1 to C4 alkyl groups or an aryl ring substituted benzalkonium halide plus at least one compound selected from silanes, soya lecithins, polydimethylsiloxanes, polydimethylhydroxy-siloxanes and mixtures thereof. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Note applicant's Annex I and Annex II do not support a combination of a quaternary ammonium compound having the general formula  $R_1R_2R_3R_4N^+X^-$ , in which one or two of the R groups alkyl substituted by aryl or interrupted by aryl or heteroatom (oxygen) and the other R groups being C1 to C4 alkyl groups or an aryl ring substituted benzalkonium halide plus at least one compound selected from silanes, soya lecithins, polydimethylsiloxanes, polydimethylhydroxysiloxanes and mixtures thereof. However USPN 6656923 makes obvious an invention comprising a quaternary ammonium compound having the general formula in which one or two of the R groups are alkyl substituted by aryl or interrupted by aryl or oxygen (Hyamine 1622) plus polydimethylsiloxane. See art rejection below.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,46-49,52,53,59,62,70,71,78,82-85,88-92,95-100,105-113,115-134 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trinh et al (USPN 6656923; 12/2/03). Trinh

Art Unit: 1616

teaches an uncomplexed cyclodextrin composition comprising a cyclodextrin. Trinh teaches that the composition can comprise other ingredients such as water, surfactants and antimicrobial actives. See abstract, column 4 line 45 – column 6 line 21. Trinh teaches that the composition can comprise dimethyl polysiloxanes (hydrophobic) and an antimicrobial active. See column 9 line 47 – column 13 line 38 especially column 11 line 48 – column 12 line 63. Trinh teaches that such compositions provide superior antimicrobial activity. See column 4 lines 34-42. Trinh teaches that the antimicrobial active can be a quaternary ammonium compound such as Hyamine 1622 - hydrophillic (see column 13 line 47 – column 15 line 56 especially column 15 line 34) which meets the structural attributes of the instantly antimicrobial, i.e. Hyamine 1622 is a quaternary ammonium compound having the general formula  $R_1R_2R_3R_4N^+X^-$ , in which one or two of the R groups alkyl substituted by aryl or interrupted by aryl or heteroatom (oxygen) and the other R groups are C1 to C4 alkyl groups. Trinh teaches that to the cyclodextrin composition can be added phenolic compounds such as chloroxylenol, and isothiazolinones. See column 19 line 47 – column 20 line 44 especially column 20 lines 4, 21-23, column 24 lines 18-39. Trinh teaches a method of applying the composition to fabric (functional material). See abstract. Column 46 lines 23-59. It is an inherent property for antimicrobial active in a composition, after being applied to an object, to control microbe growth. Note, the simple act of combining and mixing ingredients is common in this art therefore the method of making the composition as described in claim 99 is not patentable. Trinh does not exemplify an invention specifically comprising dimethyl polysiloxane and Hyamine 1622. However, it would have been obvious to one having ordinary skill in the art to make such as invention. One would have been motivated to do this since Trinh encourages the making of compositions comprising uncomplexed

Art Unit: 1616

cyclodextrin, Hyamine 1622 and dimethyl polysiloxane. See above. Note it is not necessary for Trinh to exemplify all possible combinations of ingredients suggested in order to make an invention obvious.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

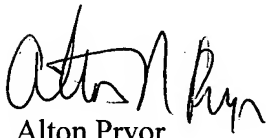
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

#### *Telephonic Inquiry*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alton N. Pryor whose telephone number is 571-272-0621. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alton Pryor  
Primary Examiner  
AU 1616